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/*****
/* Program      : SPI.C
/* Function     : MOI Machine Controller SPI Utility Control Procedures
/* Author      : John F. Fitter B.E.
/*
/* Rev No.    Rev date    Test date    Test platform    Description
/* -----    -
/*      00     6jun98
/*
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*****/

#define _SPI_C

#include <commdefs.h>
#include "moi.h"
#include "spi.h"

// Procedure to setup the spi and the spi port pin directions
void setup_spi(unsigned char mode) {

    sdo_dir = B_OUT; // make SDO output
    sck_dir = (mode & SPI_SLAVE) ? B_IN : B_OUT; // make SCK input(slave) or output
    sdi_dir = B_IN; // make SDI input
    if(mode & SPI_SLAVE & 0xf) ss_dir = B_IN; // set SS mode bit to input if required
    spi_enable(false); // disable ssp
    SSPCON = mode; // set ssp mode
    spi_enable(true); // re-enable ssp
}

// Procedure to read and return data from the spi - could call spi_write
// but will trade rom for stack levels in this case.
// The argument is the data to be transmitted (use 0 if none is required)
unsigned char spi_read(unsigned char txdata) { // write and return received data
    unsigned char rxdata;

    rxdata = SSPBUF; // lose any data in buffer, clear BF
    SSPBUF = txdata; // load transmit data
    while(!spi_data_is_in()); // wait until transmit complete
    return SSPBUF; // get received data, clear BF
}

// Procedure to write data to the spi
void spi_write(unsigned char txdata) {
    unsigned char rxdata;

    rxdata = SSPBUF; // lose any data in buffer, clear BF
    SSPBUF = txdata; // load transmit data
    while(!spi_data_is_in()); // wait until transmit complete
}

// ***** EOF SPI.C *****

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